MODIS TECHNICAL TEAM MEETING

April 20, 1995

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Dorothy Hall, Harry Montgomery, Bruce Guenther, Barbara Putney, Joann Harnden, Wayne Esaias, Locke Stuart, Dick Weber, Steve Ungar, and John Bauernschub.

1.0 SCHEDULE OF EVENTS

April 15	Quarterly Reports WERE Due to Barbara Conboy
April 28	Level 2 Software Integration Review
April 30 - May 1	CEOS Meeting -- Best Western Hotel, Lanham, MD
May 2	MODIS Calibration Working Group -- Greenbelt Marriott
May 3 - 5	MODIS Science Team Meeting -- Greenbelt Marriott
mid-June	EM Test Readiness Review (tentative)
Fall	AGU, with possible MODIS session (tentative)

2.0 MINUTES OF THE MEETING

2.1 Fall American Geophysical Union (AGU) Meeting

Salomonson suggested the possibility of an EOS session at the Fall AGU. All instruments would be invited to present. It will likely feature some posters and a few verbals. MODIS discipline groups should be thinking about possible presentations / posters; there may be some limited time for discussion at the upcoming Science Team meeting.

Salomonson also reported on a successful presentation at the SPIE meeting in Orlando. Some discussion ensued on the SRCA, and Salomonson emphasized his commitment to its importance.

2.2 Project Report

Weber reported that the MODIS engineering model (EM) is in the thermal vacuum chamber, and currently undergoing water purging. Cool-down may begin as early as today. Critical tests will be conducted over the next couple of weeks; some Project and SBRC people may be unable to attend the Science Team meeting.

The long wavelength filters have been redone (relayered with germanium) and have been tape-tested. The filters have remained intact.

The EM Test Readiness Review in mid-June is an important milestone, wherein a determination is made on what additional changes / corrections must be done to the protoflight. Team members will be advised of the meeting date.

2.3 MCST Reports

In response to questions regarding the status of a calibration plan, Guenther showed transparencies detailing the reflectance of the scan mirror (see Attachment 1). At long wavelengths (where the effect is most pronounced) the mirror is at nearly 100% reflectance at 0° scan angle, the reflectance is likely to drop off to 80% at a 60° scan angle (P-P polarization) or 60% (S-P polarization). While only a few measurements of the actual mirror are available, it is apparant that the mirror's actual performance approximates the model. Montgomery stressed the importance of precise performance knowledge -- perhaps even to the 1% level or less -- in order to properly characterize the instrument. Guenther feels that a full view of cold space, at all mirror scan angles, will be important once on orbit. Weber stressed the importance of presenting this information in a calibration plan, and Guenther responded that he hopes to have a draft available in mid-June. Salomonson urged Guenther to turn over a "zero" version to Project at his earliest opportunity.

2.4 SDST Reports

2.4.1 Algorithm Integration & Test Workshop

Putney reported a successful Algorithm Integration & Test Workshop. Present were representatives from the Science Team, the DAACs, and ECS. Putney stressed the need, as highlighted by representatives from UARS and Pathfinder, for maintaining an engineering mode of product development at the DAACs. This research and testing mode is important for the production of good science products. Putney pointed out that EROS Data Center (EDC) and the National Snow and Ice Data Center (NSIDC) will not have MODIS hardware up and running until about 6 months before launch: some integration and testing will probably have to be done using the Goddard DAAC.

There followed some discussion of QA and Validation. QA (quality analysis) was defined as "smart system" analysis of the engineering performance of the products, based on "flags" to identify significant points in the data quality, while validation is primarily a research function, probably best done by the team member, in the examination of the performance of his product in representing the real world.

Putney also reported that there will be a memorandum of understanding (MOU) between each DAAC and each instrument, which means that MODIS will need to participate in 3 MOUs.

2.4.2 Gridding and Binning

Harnden reported at some length on the present thinking on gridding and binning. She feels she has consensus on a swath-based Level 2 product, with an easy location of nearest neighbors and surrounding pixels. Realistic pixel values will be examined through this "nearest neighbor" comparison. The extent of binning was discussed: it may cover any quantity from the immediately temporal pixels, to the "bow tie" pixels that share the geolocated area, to adjacent swaths and temporally

separated pixels at the same geolocation. “Binning” can be as complex or simple as desired through the selection of the desired temporal span.

Ungar suggested an alternative method of binning, based upon satellite orbital parameters and pixel space, with the scan pattern running over a cloud mask. Matching Level 3 products to Level 2 products in satellite pixel space becomes somewhat simpler.

2.5 Ocean Group Request

Esaias expressed concern over the intuitive understanding of scattering and cross-talk, and initiated discussions with Guenther into the possibility of running algorithms on the EM data. This should give the team members a feeling for the amplitude of these and other instrument artifacts. Guenther felt that such a provision is not trivial; he will discuss further with Esaias.

2.6 Alaskan Snow Campaigns

Hall announced that the Alaskan snow campaign continues through this weekend. Considerable snow data have been collected over the campaign. Hall also reported on the acquisition of sample data from NSIDC; there was some discussion of the responsibilities of a DAAC to provide data to team members.

2.7 Science Team Meeting Agenda

Stuart presented the “final” agenda for the ScienceTeam meeting. Panel discussions are still the highlight of the meeting, and it has been determined that the final afternoon will be devoted to panel reports, rather than the previously planned discipline group sessions and reports. Stuart was asked to verify the speakers’ attendance at the meeting.

3.0 ACTION ITEMS

3.1 New Action Items

1. Discipline Group Leaders: Provide suggestions to the Team Leader on possible posters and verbals at a special EOS session at the Fall AGU.
2. Weber: Provide additional EM data, concentrating on near-field scatter and crosstalk in selected channels.

3.2 Action Items Carried Forward

1. Dave Diner & Ed Masuoka: MODIS and MISR need to settle on a protocol(s) to deal with Level 1 and Level 2 data sets to be passed between the two teams to produce joint products. Report at the next SWAMP Meeting.
2. Guenther: Report the modeled results of the 1,000K source for SBRC's integration and alignment collimator to the Technical Team. [These data are forthcoming.]
3. Fleig and Ungar: Interact with the group leaders to develop a MODIS data simulation plan for review at the next Science Team Meeting. [Work on this item is

still in progress. Simulated data are now available via FTP, and a white paper is forthcoming from Fleig.]

4.0 ATTACHMENTS

NOTE: All attachments referenced below are maintained in MODARCH and are available for distribution upon request. Please contact David Herring, MAST Technical Manager, at (301) 286-9515, Code 920, NASA/Goddard Space Flight Center, Greenbelt, MD 20771 if you desire copies of any attachments.

1. Reflectance of Scan Mirror, by Bruce Guenther
2. Comparison of EM Measured Data and MCST Modelled Theory, 8.55µm, Band 29.
3. Agenda, MODIS Science Team Meeting